Can You Hear Me Now?

First Responders Rely on Land Mobile Services

By the DON CIO Telecom/RF Spectrum/Wireless Team

The value of the improved coordination for first responders will undoubtedly enhance public safety not only on federal installations but also in adjoining communities ...

The sentries posted at the armory, the crews at the fire station, and the base security patrols in their squad cars all depend upon wireless communication to perform their duties with responsiveness and effectiveness. This is not combat, but the stakes can still be high.

This article focuses on wireless solutions for first responders with specific details for Marine Corps requirements. A future article will discuss the Navy's plan to meet its unique wireless needs for first responders.

Intelligence Reform Act

On Dec. 17, 2004, President Bush signed into law the Intelligence Reform and Terrorism Prevention Act of 2004. Title VII of the Act implements certain recommendations of the National Commission on Terrorist Attacks Upon the United States, including communications-related provisions related to use of the electromagnetic spectrum by federal, state and local emergency response providers.

The Department of the Navy (DON) approached this legislation in strategic coordination with other federal agencies and has engaged in operational planning with emergency elements at various bases, posts and stations where Sailors, Marines, civilians and military family members work, live and utilize the facilities.

Land Mobile Service

The primary wireless communication solution for local, state and federal agencies supporting the public safety is called land mobile service. It provides radio connectivity between fixed base stations and land mobile stations (i.e., stations capable of surface movement) or between multiple land mobile stations.

The land mobile service is vital to supporting the public service missions of federal agencies. Unique federal requirements for land mobile service include: providing for national security; promoting public safety for traveling via air, water and land; interdicting entry of illegal aliens and substances into the United States; establishing communications between disaster areas and relief forces; ensuring swift search and rescue operations; protecting national forests, parks and farmlands; bringing to justice perpetrators of federal crimes; and ensuring the security of energy generation and distribution sources.

A U.S. Marine Corps service member using the Enterprise-Land Mobile Radio (E-LMR).

DON Use of Land Mobile Service

Non-tactical land mobile radio systems used by the DON include equipment such as base, repeater, vehicular and handheld stations in a variety of geographic environments supporting voice and data communications. Navy and Marine Corps land mobile radio systems are usually multipurpose systems, for example, law enforcement, emergency medical, administrative and public works functions may be supported by the same radio system. The radio systems, which are purchased from commercial vendors, are similar to those employed by non-federal entities.

Users communicate in a dispatch/supervisory, one-to-many or one-to-one mode while other users monitor the channel and take action as appropriate. Typical messages from mobile sources are of short duration, and typical channel hold times for these mobile communications are quite short, usually less than a minute. Under these circumstances, one or more channels can often be shared by several independent users.

Although DON personnel use common carrier services, such as cellular telephones and radio pagers to augment communication needs, they do not serve as replacements for the DON's own land mobile systems. While both the Marine Corps and the Navy have selected similar approaches to land mobile service based on open standards, specific deployment is unique for each service.

Marine Corps LMR Challenges

The Marine Corps combat team faces diverse challenges stemming from the global war on terrorism, such as conducting combat and logistic operations in Iraq and Afghanistan and providing antiterrorism and force protection inside and outside CONUS. Not altogether different from the Marine Corps combat team, the Camp Pendleton Fire Department has been fighting and winning battles with structure and wildfires on this terrain-unique base in Southern California.

The department's primary mission is to save lives and property. Even before the recent legislation, the Camp Pendleton Fire Department coordinated efforts with the surrounding communities; thus, a requirement for reliable communications that provides interoperability with neighboring federal, state and local fire departments was identified. Since off-base counterparts of the Camp Pendleton Fire Department used commercial-off-the-shelf (COTS) equipment, a Marine Corps solution pointed to similar technology.

Concurrent with the Camp Pendleton Fire Department's need was a mandate, issued by the National Telecommunications Information Administration (NTIA), to adopt new narrowband technologies that allow greater spectrum efficiency for all land mobile radios (LMRs) used by the federal government. Serving as the president's principal adviser on telecommunications and information policy issues, NTIA also manages the federal use of spectrum and resolves technical telecommunications issues for the federal government and private sector.

The mandate sought a phased replacement of all government-owned wideband commercial handheld radios (commonly referred to as walkie-talkies but technically LMRs) beginning in 2005 and finishing not later than Jan. 1, 2008. This replacement effort requires more than individual radio unit replacement; the entire backbone infrastructure of every Marine Corps CONUS installation, including integrating system equipment, antennas, cabling, and other hardware and software directly related to the system would have to be replaced.

Faced with the Camp Pendleton Fire Department requirement and the NTIA narrowband mandate, Headquarters Marine Corps (HQMC), Marine Corps Combat Development Center (MCCDC) and the Marine Corps Systems Command (MARCORSYSCOM) coordinated efforts to review, not only Camp Pendleton's requirement for land mobile radios, but all Marine Corps requirements for LMR.

Results of a study indicated that all Marine Corps installations have similar requirements for LMR. Most deal with range fires, all deal with saving life and property, all have antiterrorism and force protection roles, and all have similar requirements for crisis type actions involving natural and manmade disasters. Yet, some aspects of the basic requirements may differ.

While Camp Pendleton and Marine Corps Air Station (MCAS) Miramar routinely deal with range fires and sometimes earthquakes, Camp Lejeune and other installations along the East Coast, deal with hurricanes. The study identified that Marine

An Enterprise-Land Mobile Radio (E-LMR) Rapid Response System (RRS) – a truck-mounted, 10-channel system, which includes 300 handheld radios.

Corps fire departments were ill-equipped to operate (off base) beyond the radio coverage of the existing LMR trunking systems. Furthermore, some bases lacked both intra-operable (within base) communications capabilities and interoperable off-base communications coordination with authorities. The study also identified that visiting units to other Marine Corps installations could not routinely use their own LMR equipment due to proprietary design differences.

Marine Corps E-LMR Mandate

The results of the study and the federal narrowband mandate clearly identified a requirement for a one-size-fits-all solution. HQMC C4 drafted a Statement of Need for an Enterprise-Land Mobile Radio (E-LMR) network. The Marine Requirements Oversight Council (MROC) mandated E-LMR as a program of record.

The MROC also directed three initial efforts for E-LMR: (1) Field two transportable E-LMR systems that provide interoperable communication capabilities with federal, state and local authorities for Marine Corps first responder and operating forces support outside the installation radio coverage areas; (2) Field an Immediate Interoperable Solution (IIS) that provides interoperability with off-base authorities using the existing installation LMR systems; and (3) Priority fielding of E-LMR to Camp Pendleton and the Marine Corps National Capital Region (MCNCR) that includes Marine Corps Base (MCB) Quantico.

To date, two transportable Rapid Response Systems (RRS) have been fielded. Located at Camp Pendleton and Camp Lejeune, the MARCORSYSCOM project is a truck-mounted, 10-channel, E-LMR system, which includes 300 handheld radios. The RRS provides interoperable communications to the most widely used federal, state and local LMR frequency bands. Each RRS contains a diesel generator as well as a 60-foot pneumatic antenna mast section.

The IIS, awarded in two separate MARCORSYSCOM contracts, is progressing well. The installed IIS at MCAS Cherry Point provides interoperable communications, using the existing LMR system,

The Marine Corps combat team faces diverse challenges stemming from the global war on terrorism …

for up to 23 different off-base authorities. IIS projects for Camp Pendleton, Camp Lejeune and MCB Quantico are expected to be completed by the end of fiscal year (FY) 2005. The IIS contract to provide identical capabilities for all remaining Marine Corps CONUS installations was awarded in May 2004.

The third immediate effort directed by the MROC is the fielding of E-LMR to Camp Pendleton and MCNCR. The MROC determined that these two sites were exposed to the greatest threat of terrorism and posed the most significant requirement for LMR interoperability. The proposed 30-mile off-base radio coverage delivered by these systems will provide enhanced LMR capabilities. The contract will provide a new trunking system backbone that operates Voice over Internet Protocol (VoIP) allowing follow-on E-LMR expansion and roaming-like capabilities.

Because the E-LMR network adheres to an Association of Public-Safety Communications Officials (APCO) standard (Project 25), it will provide a myriad of interoperability possibilities including system-to-system and over-the-air capabilities that were previously unattainable due to proprietary vendor specifications. The entire backbone infrastructure, including the radios, is fully encrypted with the Advanced Encryption Standard (AES). Although not authorized for classified communications, AES provides a robust encryption capability.

Initially, the new E-LMR environment will provide handheld, vehicular and base station radios to Marine Corps first responders and the location's mission critical requirements, including weapons and test range operations, flight line operations, area guard and other areas that require immediate voice capabilities. The completion of the Camp Pendleton and MCNCR E-LMR systems is scheduled for the first quarter of FY 2006. HQMC has been working on the E-LMR project hand-in-hand with the Navy. Led by the Chief of Naval Installations (CNI) N46, the Navy is moving forward with a similar initiative.

The benefits of E-LMR are many: increased communication that results in increased security for Marine Corps installations, interoperable communications for first responders, which results in dynamic on- and off-base response capabilities and increased safety for operating forces training on range complexes. The cumulative E-LMR benefits and capabilities are dependent on the successful coordination of all the resources that can be aggregated through these wireless communication systems.

The DON proves each day in combat that its capacity to synchronize resources with joint partners enables greater force capabilities over the foe. The value of the improved coordination for first responders will undoubtedly enhance public safety not only on federal installations but also in adjoining communities.

For more information, contact the DON CIO Telecom/RF Spectrum/ Wireless Team at DONSPECTRUMTEAM@navy.mil. CHIPS

Active Duty Alert Helps Combat Identity Theft

Identity theft is a growing crime in the United States. Consumers, including non-active duty personnel, can take various actions to minimize the risks of identity theft including checking credit reports regularly and keeping track of monthly bills.

Active duty personnel who are away from their regular duty stations are less able to take these steps, so they can be particularly vulnerable to identity theft. To enable personnel on active duty and activated reservists to devote their attention exclusively to the defense needs of the nation, Congress recently created a new tool to help guard against identity theft: the active duty alert.

Active Duty Alert

The active duty alert is a statement that is placed in the credit file of an active duty military consumer so that anyone checking the file for the purpose of establishing or extending credit is informed that the person is on active duty and the identity of the person requesting credit must be verified before the request can be granted.

The active duty alert is part of the Fair and Accurate Credit Transactions Act of 2003 (FACTA), which amends the Fair Credit Reporting Act (FCRA). Congress designed this alert as a protection for those deployed in locations or situations in which they are unlikely to be able to apply for credit or monitor their financial accounts. *(For more information about FACTA and FRCA, go to http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_public_laws&docid=f:publ159.108 and http://www.ftc.gov/os/statutes/031224fcra.pdf, respectively.)*

Under FACTA, if you qualify as an active duty military consumer, you can place an active duty alert in the credit file maintained on you by nationwide consumer reporting agencies. You may also designate a personal representative to place or remove the alert for you. The alert lasts for 12 months, but if you receive an extended deployment, you may place another active duty alert after the first one expires. You may cancel the alert at any time by contacting one of three credit reporting agencies (CRAs): Equifax, Experian and TransUnion. (See the text box on the next page for contact information for the CRAs.)